Paper No.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAMUEL M.D. NORVILLE,
PATRICK J. LOMBARD,
JIAN LU,
and
SHAUPOH WANG

Appeal No. 2004-1340
Application No. 09/585,061

ON BRIEF

Before OWENS, DELMENDO, and JEFFREY T. SMITH, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2003) from the examiner's final rejection of claims 1 through 19, 24 through 26, and 31 through 38 (final Office action mailed May 7, 2003), which are all of the claims pending in the above-identified application.

The subject matter on appeal relates to a method of producing on-demand, semi-solid material for a metal alloy casting process. Further details of this appealed subject matter are recited in representative claim 1 reproduced below:

> 1. A method of producing on-demand, semi-solid material for a casting process, said method comprising the following steps:
>
> heating a metal alloy until it reaches a molten state;
>
> transferring an amount of said metal alloy, while in said molten state, to a vessel;
>
> cooling said amount of metal alloy in said vessel;
>
> applying an electromagnetic field to said amount of metal alloy for creating a flow pattern of said metal alloy within said vessel while said cooling continues in order to create a slurry billet of the desired thixotropic solid to liquid ratio for casting; and
>
> discharging said slurry billet from said vessel, directly and immediately, into a shot sleeve of a casting machine, without any intermediate stage of holding said slurry billet between said vessel and said shot sleeve and without any heating step subsequent to said discharging from said vessel.

The examiner relies on the following prior art reference as evidence of unpatentability:

Brauer et al. (Brauer)	5,098,487	Mar. 24, 1992

Claims 1 through 19, 24 through 26, and 31 through 38 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable

over Brauer. (Examiner's answer mailed Jan. 20, 2004, pages 3-5; final Office action, pages 2-4.)

We reverse.

Brauer teaches a method of rheocasting liners for shaped charge devices used to perforate oil well casings and well bore holes comprising:

providing a molten metal;

transferring the molten metal to a stirring system 58, which contains a stirring means (e.g., a mechanical auger or electromagnetic stirring means);

maintaining the temperature of the stirring system close to the solidification temperature of the alloy;

passing the resulting semisolid slurry 68 from the stirring system through opening 66 to a casting chamber 70; and

forcing the slurry into a shaped charge liner mold 78 using a ram 74. (Column 1, lines 13-18; column 8, lines 46; Figure 8.)

The appellants' principal argument is that Brauer does not teach or suggest discharging a "slurry billet" from a vessel into a shot sleeve of a casting machine, as recited in the appealed claims. (Appeal brief, page 20; reply brief filed Mar.

25, 2004, pages 2-4.) The examiner, on the other had, alleges that "[w]hether the semi-solid slurry is called as 'slurry' or 'slurry billet' is no thing [sic] more than a personal preference." (Answer, page 7.)

We cannot agree with the examiner. The specification makes it clear to one of ordinary skill in the art that the term "slurry billet" refers to a slug. (See, e.g., page 1, lines 19-24; page 27, line 18 to page 28, line 3; Figure 14.) By contrast, Brauer merely teaches a "semisolid slurry 68." Nothing in Brauer indicates that the "semisolid slurry 68" is a slug. Because the examiner offers no evidence or scientific reasoning on why one of ordinary skill in the art would have been led to form a "slurry billet" in Brauer, we cannot affirm the examiner's rejection.

For these reasons, we reverse the examiner's rejection under 35 U.S.C. § 103(a) of appealed claims 1 through 19, 24 through 26, and 31 through 38 as unpatentable over Brauer.

The decision of the examiner is reversed.

REVERSED

Terry J. Owens)
Administrative Patent Judge)
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Romulo H. Delmendo) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
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) INTERFERENCES
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Jeffrey T. Smith)
Administrative Patent Judge)

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